Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A powertrain, comprising:

a primary power generating system for generating a primary drive torque, the primary power system having a hydrogen-fuelled internal combustion engine operating with a lean hydrogen gas fuel mixture, the internal combustion engine having at least one air charge boosting device for increasing the primary drive torque at a first range of operating speeds of the powertrain; and

a secondary power generating system having at least one electric torque generating device for generating a secondary drive torque, the secondary power generating system being constructed and arranged such that the secondary drive torque complements the boosted primary drive torque over at least a ~~low~~ second operating speed range of the powertrain that is lower than the first range of operating speeds.

2. (original) A powertrain according to claim 1, wherein the primary power generating system comprises at least one intercooling device.

3. (original) A powertrain according to claim 1, wherein the primary power generating system comprises a dual stage intercooler.

4. (original) A powertrain according to claim 1, wherein the primary power generating system comprises a front end accessory assembly optimised for reducing noise, vibration and harshness (NVH) associated with the powertrain.

5. (original) A powertrain according to claim 1, wherein the primary power generating system is shielded with a sound absorbing barrier to reduce NVH emanating from the air charging device.

6. (original) A powertrain according to claim 1, wherein the secondary power generating system comprises an electrical motor/generator.

7. (original) A powertrain according to claim 1, further comprising a disconnect clutch disposed between the primary generating power system and the secondary power generating system for engaging and disengaging the primary power generating system from the secondary power generating system and for transferring the boosted primary driver torque through the secondary power generating system.

Claims 8-9 (canceled)

10. (currently amended) A powertrain according to claim 1, further comprising a power transmission system coupled to the output of the secondary power generating system for receiving a combination of the boosted primary drive torque and the secondary drive torque, the combination of the boosted primary drive torque and the secondary drive torque having an enhanced torque characteristic over at least ~~the~~ a low operating speed range of the powertrain.

Claims 11-13 (canceled)

14. (currently amended) A powertrain according to claim 1, further comprising:

a disconnect clutch disposed between the primary generating power system and the secondary power generating system for engaging and disengaging the primary power generating system from the secondary power generating system and for transferring the boosted primary driver torque through the secondary power generating system; and

a power transmission system coupled to the output of the secondary power generating system for receiving a combination of the boosted primary drive torque and the secondary drive torque, the combination of the boosted primary drive torque and the secondary drive torque having an enhanced torque characteristic over at least ~~the~~ a low operating speed

range of the powertrain, the secondary power generating system, the disconnect clutch and the power transmission system being packaged as a modular hybrid transmission system.

15-31 (canceled)

32. (currently amended) A method for sensing and responding to a backfire arising in the intake system of a hydrogen fuelled reciprocating internal combustion engine, comprising the steps of:

sensing a backfire by sensing the temperature within the intake system; and

automatically shutting off the hydrogen fuel to the engine when a backfire is sensed.

33. (original) A method according to claim 32, further comprising the step of increasing the output torque of an electric drive system associated with the engine in the event the hydrogen fuel is shut off.

34. (original) A method according to claim 32, further comprising the step of sensing a backfire by sensing the pressure within the engines intake system.

35. (original) A method according to claim 32, further comprising the step of resuming fuelling of the engine with hydrogen once a backfire event has ceased.

36. (new) The powertrain of claim 1, wherein the first range of operating speeds of the powertrain is greater than approximately 2500 revolutions per minute.

37. (new) The powertrain of claim 36, further comprising a transmission, and wherein the operating speeds of the powertrain is the input speed to the transmission.

38. (new) The powertrain of claim 36, further comprising:

a low flow rate fuel injector for injecting fuel into the engine when the engine is operating within a first engine speed range; and

a high flow rate fuel injector for injecting fuel into the engine when the engine is operating within a second engine speed range at least some of which is higher than the first engine speed range.

39. (new) The powertrain of claim 38, wherein the fuel injectors have variable injection flow rates controlled by pulsing the injectors on and off.

40. (new) The powertrain of claim 39, wherein the low flow rate fuel injector is operable over a first range of flow rates and the high flow rate fuel injector is operable over a second range of flow rates, an upper portion of the first range of flow rates overlapping with a lower portion of the second range of flow rates.

41. (new) A powertrain, comprising:

a primary power generating system for generating a primary drive torque, the primary power system having a hydrogen-fuelled internal combustion engine operating with a lean hydrogen gas fuel mixture, the internal combustion engine having at least one air charge boosting device for increasing the primary drive torque;

a secondary power generating system having at least one electric torque generating device for generating a secondary drive torque, the secondary power generating system being constructed and arranged such that the secondary drive torque complements the boosted primary drive torque; and

a control system including at least one control module and configured to:

control the at least one air charge boosting device to increase the primary drive torque over a first range of powertrain operating speeds, and

control the secondary power generating system to boost primary drive torque over a second range of powertrain operating speeds at least a portion of which is lower than the first range of powertrain operating speeds.

42. (new) The powertrain of claim 41, wherein the first range of powertrain operating speeds is greater than approximately 2500 revolutions per minute.

43. (new) The powertrain of claim 41, further comprising a transmission, and wherein the operating speeds of the powertrain is the input speed to the transmission.

44. (new) The powertrain of claim 41, further comprising:

a low flow rate fuel injector for injecting fuel into the engine when the engine is operating within a first engine speed range; and

a high flow rate fuel injector for injecting fuel into the engine when the engine is operating within a second engine speed range at least some of which is higher than the first engine speed range.

45. (new) The powertrain of claim 44, wherein the fuel injectors have variable injection flow rates controlled by pulsing the injectors on and off.

46. (new) The powertrain of claim 45, wherein the low flow rate fuel injector is operable over a first range of flow rates and the high flow rate fuel injector is operable over a second range of flow rates, an upper portion of the first range of flow rates overlapping with a lower portion of the second range of flow rates.